A Communicative Perspective in Romanian Utterance Analysis

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1. Introduction

In this paper we analyze the Romanian utterances from the communicative act perspective aiming to explain the role of intonation in generating the hierarchy of Information Packaging Units (IPUs). The aim of the paper is to present a basic IPU structure and to exemplify how it is realized at different levels of a long utterance compound by several intonational Phrases (IPs). This structure can be generalized for IPUs produced at a discourse segment hierarchy and hence, we have done a parallel between our model for utterance partitioning and the discourse segment model of (Grosz, Sidner 1986) by taking into account the same three aspects: linguistic, attentional and intentional.

An utterance analysis at communicative level implies to identify the IPU hierarchy generated by the speaker in building the message to the hearer. The input data of such analysis are generated by the two tier of an utterance: the text with the syntactic structure and the intonational contour with its prosodic structure. An IPU groups two or three constituents (text + intonation) which can be elementary ones (words-prosodic words) or non-elementary ones (word groups-prosodic groups).

Two points of view were taken into account in the literature for describing the information structure: the informativeness and the aboutness. The 'topic/comment' and the 'focus/ground' are the two corresponding structures. Chafe (1976) introduces the term of information packaging in referring to these structures. Vallduvi further develops the idea of information packaging and proposes to conflate the two traditional binomial articulations of focus/ground and topic/comment into a single trinomial one: 'link', 'tail' and 'focus' (Hendriks 1996).

We based the utterance partitioning on a binary and ternary embedded IPU hierarchy. Based on the F0 contour pattern of the constituents we distinguish, within each IPU, between a constituent that gives the general reference to this 'object' of IPU and one or two other constituents which add other reference(s) to the 'object'. These functional constituents reflect the intentional aspect in IPU structuring.

The utterance intentional structure is modulated by the 'old-new' information structure (IS) of the corresponding text that leads to certain focus position related to the

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position of the constituents which bears the 'new' information. This relation between the new information and focus position in Romanian utterance is also outlined in (Chitoran et alii 1984). The focus position is related to the attentional aspect of the communicative analysis. The attentional structure which makes the IPU hierarchy to be perceived overlaps the intentional structure. Thus, a single utterance partitioning results and the IPU constituents have functions at both aspect levels.

In the section 2 the basic IPU structures at intentional and attentional levels are presented. In the third section a type of connection between the constituents of multi-IP IPU is illustrated. In the last section we conclude on the advantage of adopting a communicative perspective in utterance partitioning on which basis a cross-linguistic framework can be developed in utterance and discourse analysis.

2. A basic structure of Information PackagingUnits

The attentional aspect of a IPU structuring is related to the functions of the constituents in highlighting to the hearer different part of a IPU by using prosodic phrases with corresponding focus events. The intentional aspect of IPU structures refers to the function of constituents in building IPUs around their 'objects' that leads to a coherence of the words within an utterance.

2.1. A trinomial IPU structure at the attentional level

One of constituents of the trinomial structure usually contains a rising pitch movement but it always generates a high tonal pole within descending intonation contour utterances. Its pair constituent usually contains a falling pitch segment which reaches the low tones but it always generated a low tonal pole. In the trinomial structure case the constituents have the left and right peripheral positions. We named it PUSH and POP constituents of IPUs at the attentional level by analogy with the operators into the attentional space defined by the discourse model presented in (Grosz, Sidner 1986).

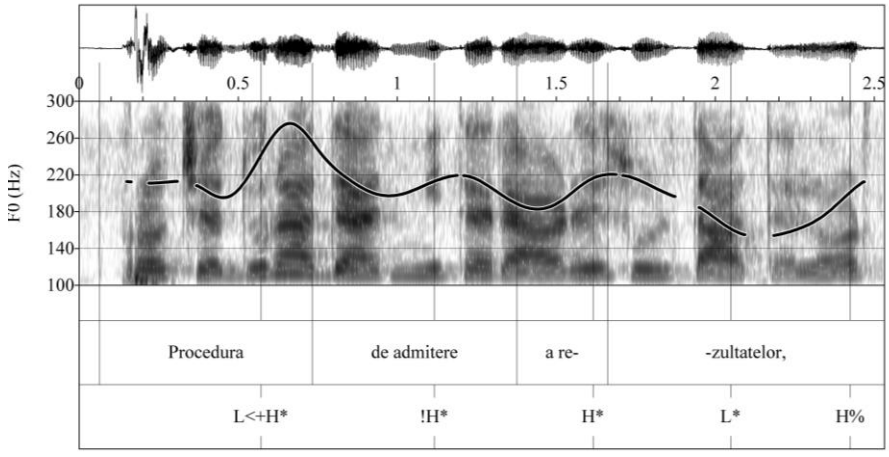


Fig. 1. The F0 contour and the spectrogram of the utterance corresponding to the text *Proce'dura de ad'mitere a 're-zul'tatelor…*, "The admission procedure of the results…"

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In the example from fig. 1 one observes the two tiers of the first IPU from a longer utterance. The IPU corresponds to the subject-NP. The NP correspond to the text *Proce'dura de ad'mitere a 're-zul'tatelor*..., 'The admission procedure of the results…'. At intonation level it corresponds to an IP with continuation boundary tone that is compound by a sequence of three constituents: two prosodic words and a final group of two prosodic words. The final group is due to a particular utterance of the word *REzulTAtelor* 'results' by applying a main stress on the syllable 'TA' and a secondary one on the syllable 'RE' (cleft word).

The maximal tone of the IP is reached during the first prosodic words after a significant rising pitch movement which characterize the first IPU constituent of 'PUSH' type. In the case of fig. 1 we labelled the first constituent of the IPU by PH+F because it reaches the highest tonal level of the IP during the accented syllable and accordingly to (Dascalu-Jinga 1998, 2001), it bears the focus.

The last IPU constituent of POP type (lablled PO) is in sintagmatic relation with the PUSH constituent. The falling pitch movement to the lowest tone may occur on accented syllable or one of the following non-accented syllables. In Romanian the PO+F unit occurs in the case of the new information having a final position in the statements.

The intonation uses prosodic units to build IPU hierarchy but IPUs does not fit the prosodic unit at higher levels (e.g. an IPU with a trinomial structure may have the first constituent within one IP and the other two ones within the second IP.

Between the two constituents that generate the tonal contrast of the IPU, a constituent with a median position in the tonal space occurs (in the case of a trinomial structure). It has a F0 pattern with a downsteping tendency (illustrated in fig. 1 by the melodic contour related to the text *de admitere*) or having an F0 pattern which keeps the same tonal level in the end as in its beginning (illustrated in fig. 1 by the melodic contour of the whole subject-NP). We annotate this constituent by LINK (labelled by L) because it acts as a correlate between the peripheral PUSH and POP constituents within the trinomial structures. In the case of a binomial structure the LINK constituent anchor only one other element of the structure.

After the presentation of the three constituent types at attentional level we can introduce the PUSH/LINK/POP partitioning of an IPU. Any of the three functional constituents can bear the focus and one of the three partitioning variants described in (1) can occur.

PH+F/L/PO, PH/L+F/PO and PH/L/PO+F (1)

The last two variants can be observed in neutral statements related to (2) and (3) where the focused word is linked to the 'new' information.

Ce face Maria? (2)
Maria [$_F$ ***desenează****] o casă.*
'What is Maria doing?
Maria is drawing a house.'

Ce şi-a cumpărat Maria? (3)

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*Maria şi-a cumpărat [$_F$ **o casă**]*.
'What did Maria buy?
Maria bought a house.'

The structure of IPU in fig. 1 can be described by using functional labels as in relation (4). The PH+F/PO describe the internal structure of the last PO constituent.

$$\{PH+F/L/(PH+F/PO)_{PO}\} \quad (4)$$

The PUSH, POP, LINK functional categories of constituents and the FOCUS attribute can be used for describing the IPU structures at attentional level.

2.2. A trinomial IPU structure at the intentional level

The 'object' of the communication within a IPU trinomial partitioning has a median position and it anchors two peripheral constituents which add other information to the 'object'. The function of the 'object' constituent is equivalent to that carried by the predication at the syntactic structure level. We prefer the 'predicative' term for the 'object' general reference constituent because it conveys the predicative character of IPUs. The communication is a predicative act as all acts generated by the human thinking. In a binomial structuring of a IPU, when the 'object' constituent anchors one right referential constituent, the predicative constituents may refer an entity introduced in a previous discourse. In all cases the predicative constituent is related to the word(s) to which the communication unit refers.

The predicative constituent is annotated by the P label. The intonational contour in fig. 1 gives to the noun *admitere* 'admision' a predicative function at this local IPU level. The noun is derived from the verb *a admite* 'to admit'. The predicative constituent corresponds at attentional level to the LINK compound which melodic contour suggests its articulations with the adjacent PUSH and POP constituents.

The peripheral constituents add other references to the 'object'. They are named in our modelling as referential constituents (labelled R1, R2). The corresponding words are uttered by using the melodic contours accordingly to the PUSH and POP constituent realizations.

The intentional structures description of the IPU in fig. 1 is presented in relation (5). The brackets signify that the IPU fits a whole IP.

$$\{R1/P/R2\} \quad (5)$$

In this paper we prefer to conflate the attentional description from (4) with the intentional description from (5) in order to result a description with the information related to the predicative and referential constituents and to the focus position. Depending on the focus positions one of the three descriptions results as they are presented in (6).

$$\{R1+F/P/R2\} \quad \{R1/P+F/R2\} \quad \{R1/P/R2+F\} \quad (6)$$

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The intonational contour in fig. 1 transforms the subject-NP into an IPU with one predicative element carried by the noun *de admitere* 'the admission' and the two referential elements: the nouns *procedură* 'the procedure' and *a rezultatelor* 'of the results'. The R1 constituent bears the focus and this IPU is described as in (7).

{R1+F/P/R2} (7)

In this section it was presented an IPU structure in the case it fits only one intonational phrase. In the following section is discussed an example of connection between the constituents of an global IPU that are supported by several IPs.

3. An example of connection between the constituents of a multi-IP IPU

In this section we present a trinomial structured IPU compound by three IPs that is schematic represented in fig. 2.

The multi-IP utterance of the text in (8) has a trinomial structure represented in fig. 2. It contains two peripheral IPUs (IPU1, IPU3) that fit IP1 and IP3.

The global IPU (denoted by IPU4) treats the IPU1 and IPU2 as referential constituents linked by the predicative constituent located in IP2 which has the melodic cue of bringing the last tone of the IP at the same level as its beginning tone (a parenthetic intonation).

This intonational support (IP1-IP3 sequence) is used in one utterance of the sentence presented in (8) where all local or global predicative constituents at communication level were marked by stroke line.

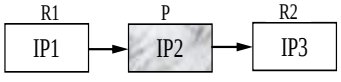


Fig. 2. A schematic representation of an IPU with three IPs articulated within a trinomial structure

_____IPU1_____
{*Întrebarea/ ~~se dovedeşte/~~ (un simplu/ ~~exerciţiu~~/ de introspecţie)*}
{*~~dar este/ de asemenea~~*}
_____IPU2_____
{*(şi/ ~~o serioasă~~/ formă)~~de prevedere~~ (a/ viitorului.)*}
_____IPU3_____

('The question proves itself to be not only an introspection exercise, but also a serious form of foreseeing the future.') (8)

At it turn the IP2 may also be considered an IPU (IPU2) having its own structure (*dar/este/de asemenea*) with the predicative constituent on the auxiliary verb *este*. The same observation may be formulated about the R2 constituent of the IPU1 and the R1 constituent of IP3 but the communicative structure description of the sentence presented in (9) does not detail their internal structures.

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$$\begin{array}{c} \underline{\quad\quad IPU1 \quad\quad\quad} \; \underline{\quad\quad IPU2 \quad\quad\quad} \; \underline{\quad\quad IPU3 \quad\quad\quad} \\ \{R1+F/P/R2\}_{R1} \; \{R1+F/P/R2\}_{P} \; \{R1+F/P/R2\}_{R2} \\ \underline{\quad\quad\quad\quad\quad\quad\quad\quad IPU4 \quad\quad\quad\quad\quad\quad\quad\quad} \end{array} \qquad (9)$$

We have presented an example of packaging a text by using embedded units with trinomial structures at different levels of the communication hierarchy.

4. Conclusions

The trinomial IPU structure presented in this paper can explain a certain type articulation of three IPs within an utterance.

The view presented in the paper in utterance partitioning can be integrated in a discourse structure modelling perspective as that defined in (Grosz, Sidner 1986) that takes into account the three aspects: linguistic, intentional and attentional.

The PUSH/POP constituent categories and the focus function are related to the attentional structure of an IPU and they have specific acoustic cues which signal to the hearer the beginning / the end of the communication units/complex constituents and the 'new' information at each IPU level. The advantage of the attentional structures of our modelling consists in a free position of the focus which can be assigned to an IPU constituent in any position when it is related to the new information or to an implicit position in the 'all new' IS case.

Referring to the intentional structure of an IPU it has to underline its advantage given by defining the topic as the 'object' general reference within a communication unit leading to the predicative essence of this constituent. In this perspective IPU identification in utterance partitioning is equivalent to predication identification at any level of the hierarchy based on the intonational contour analysis. In the communication act the intonation can apply predicative accents on words without verbal support.

In the presented view the FOCUS is not a partition type but it is an attribute of one partition within an attentional or intentional structure. This partitioning model accentuate the correlative or anchoring function of the topic constituent within an IPU and it is not related to the first part of a sentence or to an old-new information structure, only.

This view proposes an intonational basis for utterance partitioning structures that have to apply local and global functions accordingly to the speaker's text interpretation.

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In this paper we analyze the Romanian utterances from the communicative act perspective, aiming to explain the role of intonation in generating the hierarchy of Information Packaging Units (IPUs). In our view, IPUs at both low and high levels connect one or two referential constituents to an "object" general reference constituent. The paper introduce the "predicative" term for the "object" general reference constituent in order to outline the predicative meaning of IPUs. A predicative constituent can or cannot correspond to a predicative mark at the syntactic level. In the negative case, all predicative constituents of IPUs have in common certain melodic cues at the intonation level. In the second section, a basic IPU structure is presented. In the third section a connection between the constituents of a multi-IP IPU is illustrated. In the last section, we conclude on the advantage of adopting a communicative perspective in utterance partitioning.

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